SPECIFICATION
FOR REPLACING THE EXISTING 10-TON
PACKAGED ROOFTOP COOLING UNIT
WITH A NEW 10-TON
PACKAGED ROOFTOP COOLING UNIT
AT THE
AIR TRAFFIC CONTROL TOWER
FLORENCE REGIONAL AIRPORT
FLORENCE, SC

1. GENERAL.

1.1. These specifications cover the requirements of the Federal Aviation Administration for removing the existing 10-ton packaged rooftop cooling unit with electric heat and furnishing and installing a new 10-ton packaged rooftop cooling unit with electric heat atop the cab roof at the Air Traffic Control Tower facility in Florence, SC.

1.2. The requirements of these specifications are intended to be in conformity with all current building, electrical, mechanical and OSHA codes. If they are found to be in conflict, the contractor shall notify the pertinent FAA official prior to continuing. The contractor shall also adhere to all Federal, state, and local labor and safety statutes that may apply.

1.3. The work shall include, but not be limited to, furnishing all labor, materials, equipment, and services as necessary to provide turn-key HVAC Construction, Modernization and Repair Services for the FAA with minimum review and supervision. The Contractor shall have the required qualifications and capabilities listed below and shall have the infrastructure and associations described herein. The projects will require the completion, in whole or in part, of these listed services and tasks. The Contractor shall:

a) Have successfully performed HVAC construction, modernization and repair services, as described herein, for the FAA, large corporations, or other federal agencies.

b) Have demonstrated ability to successfully construct projects that: must accommodate limited space, are in

close proximity with air traffic controllers who must continue their assigned duties, are in spaces densely filled with electric and electronic equipment that must remain in operation and be protected throughout the course of the work, minimize noise, odors, bright lights, require work outside normal business hours, require close coordination with employees performing critical functions to minimize disruption to necessary operational requirements, require breaks in the construction process due to moratoriums during high air traffic periods.

c) Employ personnel that currently possess or that can obtain proper FAA contractor identification badges, so they may access FAA sites/buildings/structures without FAA escorts.

d) Have sufficient resources to accomplish the work and provide the best value to the FAA.

e) Be a corporation with a permanent physical address and telephone number, and shall have been in continuous business for a minimum period of two years.

f) Be licensed to perform the construction, modernization and repair of HVAC systems.

g) Have performed construction services, as described herein, for at least the last two years.

h) Have been in HVAC/mechanical as the primary line of business for at least the five previous consecutive years.

1.3. ACRONYMS AND ABBREVIATIONS.

AF - Airway Facilities
ATCT - Air Traffic Control Tower
Btu - British Thermal Unit
CFM - Contractor Furnished Material
cfm - cubic feet per minute
CO - Contracting Officer
COR - Contracting Officer's Representative
FAA - Federal Aviation Administration
FLO - Identifier for Florence, SC

GFM - Government Furnished Material
MAX - Maximum
MIN - Minimum
MYR - Identifier for Myrtle Beach, SC
NTP - Notice To Proceed
SSC - System Support Center (local FAA)

2. CONDITIONS AFFECTING WORK.

2.1. SCOPE OF WORK. The scope of work shall include, but is not limited to, furnishing all labor, materials, tools, equipment, and services as necessary to furnish and install a new cooling unit atop the ATCT cab, approximately 70' above ground. The new unit will replace existing functional unit at an operational facility. The general scope of work is as follows:

a) The contractor shall install temporary cooling, minimum of 10 tons, in the cab, for the duration of the project. The temporary cooling system(s) shall be split system with the compressor(s) mounted outside the cab. Installation shall include electrical connections.

b) The contractor shall remove the existing 10-ton unit from its mounting atop the roof curb, including exterior electrical and extended sheet metal cap.

c) Install new 10-ton unit atop the roof curb, aligning the return ducting (The supply is fed unducted into the plenum).

d) Terminate existing power wiring to the new unit's breaker. Exterior conduit shall be weatherproof, UL listed, and comply with NEC. AC unit to be grounded.

e) Reconnect existing return ducting to the new unit as required to yield a continuous airtight ducting system. Ensure proper vapor barrier at building envelope; duct seals passing through building penetrations shall be sealed to withstand a pressure of plus or minus 2" of water gauge and made completely airtight. Appropriate sized roof curb adaptor is required for sealing between existing roof curb and new smaller unit, MircoMetl or approved equal to be submitted for consideration.

f) Install a new digital thermostat, with humidity sensing and control, to replace the existing thermostat, and properly

reterminate wiring. Install additional wiring as necessary for additional humidity controls.

g) The contractor shall remove from site and properly dispose of the existing unit.

h) The contractor shall demonstrate the operational characteristics of the unit (including thermostat/humidistat) as part of the contract.

2.2. SCHEDULING OF WORK. The scope of work under this contract requires working on operational FAA facilities. The contractor, therefore, will be required to coordinate his activities with the COR who will be identified at the preconstruction conference. The COR or his designated representative shall escort the contractor, and shall remain on site whenever the contractor is onsite. All work, including daily cleanup, shall be performed between the hours of 8:00 AM to 4:00 PM, Monday through Friday, unless otherwise coordinated with the local FAA.

2.3. SITE VISIT. The bidder is expected to carefully examine the site and all areas of proposed work to see firsthand the extent of work involved. The submission of a proposal will be considered prima facie evidence that the bidder has made such an examination and is satisfied as to the conditions to be encountered in performing the work. It shall be the responsibility of the bidder to make his own interpretations of existing site conditions as the drawings and specifications may not reflect all site characteristics. To schedule a site visit, contact Brian Riportella, FAA MYR SSC Manager, at (843)238-1850.

2.4. WORK LOCATION. The contractor will be responsible for obtaining all required insurance, bonding, badges, etc. as required by the CO.

2.5. WORK ACCESS. Access to the site requires passing through a security gate. Therefore, the local FAA will escort the contractor to and from the site on a daily basis, unless alternate arrangements are agreed upon at the preconstruction conference. The contractor shall coordinate his schedule to the local FAA in order to secure a daily escort.

2.6. WORKERS. Due to security regulations, no foreign national workers will be allowed on the job site without 30 day

notification and approval. Contact the SSC Manager for further information.

2.7. DEMOLITION. Any equipment or material to be removed, unless specified to remain the property of the FAA, shall become the property of the contractor and shall be transported from the site and disposed of in a legal manner. Demolition and removal work shall be performed in compliance with safety procedures, applicable requirements of the State and local regulations, and with Federal and FAA requirements.

The contractor shall submit procedures proposed for the demolition and removal work. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials, protection of property, which is to remain undisturbed or specified to be salvaged, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation and the sequence of operations.

2.8 SAFETY STANDARDS. Contractors shall comply with all applicable federal, state, and local requirements for protecting the safety of the contractors' employees, building occupants, and the environment. In particular, all applicable standards of the Occupational Safety and Health Administration (OSHA) shall be followed when working in accordance with this specification. Fall protection is required when working above heights of 10' and 3' from ledge.

2.9 WORKING CONDITIONS. Construction/demolition shall in no way interfere with Air Traffic Control Operations. Extreme care shall be exercised so as not to cause any interference or interruption of service from this facility. It is absolutely mandatory that the contractor protects FAA personnel, communication, electrical and mechanical equipment both inside and outside the building from damage caused by work impact, water, debris or dust. The contractor shall have the overall responsibility for the performance and enforcement of all forms of protection within the premises against any damages due to work performed under this contract. Any damages incurred, as a result of construction activity during the performance of this contract will be repaired/replaced immediately by the contractor at no cost to the FAA.

3. SUBMISSIONS.

3.1 Prior to job start, the contractor shall submit to the CO the following:

a. Product literature on the new HVAC unit which show that ALL specified items set forth in Section 4.4 are met or exceeded.

b. Product literature on the new thermostat/humidistat.

c. Product literature on the roof curb adapter.

All submissions should be submitted within 10 days from contract award for a determination of specification compliance by the Government prior to said product manufacture.

4. MATERIAL.

4.1. GENERAL. All material specified herein shall be supplied, transported, maintained handled installed and stored by the contractor. All material estimates and measurements are the responsibility of the contractor.

4.2. MATERIAL SPECIFICATIONS. All material shall adhere to the guidelines and specifications set forth in the latest editions of the UL, and ASTM publications. Items 4.4. through 4.9. are major CFM items, however, they are not inclusive of all CFM items.

4.3. EXISTING UNIT. The existing unit to be removed and disposed is: Carrier, model # 50TFQ012---511--.

4.4. NEW UNIT. The new unit shall be cooling with electric heat; outdoor, rooftop/curb mounted; vertical supply/return (to match existing supply/return configuration); Trane model # THC120E3RKA**00A3A2A0B200 or equal, and shall include the following features:

4.4.1. ARI Certification.

4.4.2. Cooling capabilities shall be based on 95-degree F DB entering condenser and 80 degrees F DB/67 degrees F WB entering evaporator.

4.4.3. Dual, hermetic scroll compressors with suction and discharge service valves, vibration isolators, crankcase heaters, sight glass, and filter dryer.

4.4.4. Independent refrigeration circuits for full backup.

4.4.5. Low pressure/loss of charge protection, dual freeze protection and high pressure switches.

4.4.6. Multispeed direct drive for evaporator.

4.4.7. Insulated cabinet with 500-hour salt spray protection, pre-painted, galvanized steel.

4.4.8. Dedicated vertical supply and return configurations, to match existing duct configuration.

4.4.9. Constant air volume controls.

4.4.10. Superior airside performance up to 2.0" (max) net ESP.

4.4.11. Full cable ready DDC controls are standard.

4.4.12. High efficiency evaporator fan motors.

4.4.13. Service option package (available individually):
- Hinged access panels
- Non-fused internal circuit breaker
- Non-powered 115V GFCI Convenience Outlet

4.4.14. Condenser coil hail guards.

4.4.15. Low ambient kit (0 deg F), consisting of:
- variable fan control (motor master)
- heated receiver on discharge line

4.4.16. Ignore economizer mode; do not install outside air intake hoods.

4.4.17. Provide factory-recommended pleated filters. Provide initial set and spare set for each unit.

4.4.18. Units shall be wired at factory so that when thermostat and humidistat set points are satisfied, all compressors shall immediately de-energize.

4.4.19. Provide a spare microprocessor control circuit board. Spare circuit board shall be identical to and fully compatible with circuit boards factory-installed in air conditioning units.

4.4.20. Provide protective factory-applied black epoxy coating for the evaporator and condenser coil fins. Drain pan shall be sloped, insulated stainless steel. Coil fins shall be aluminum-copper.

4.4.21. Provide each unit with anti-short cycle timers for each compressor, time delay relays, and compressor unloaders. All time delay relays shall be adjustable type (0 to 5 minutes).

4.4.22. Units shall operate on 208V/60Hz/3Ph.

4.4.23. Air flow ratings: 4,000cfm (nominal).

4.4.24. Efficiencies: 13.0 EER (min).

4.4.25. R-410A Refrigerant.

4.4.26. 27 kW electric heat option (nominal).

4.4.27. Dehumidification reheat option, with humidity sensor, so as to maintain relative humidity levels between 30% and 55%.

4.4.28. Warranty: extended 5-year parts, labor and refrigerant warranty.

4.5. THERMOSTAT/HUMIDISTAT. Digital, programmable, compatible with packaged, cooling-heating system with dehumidification option, LCD display.

4.6. ROOF CURB ADAPTER. Galvanized sheet metal, sized so as to transition between the existing roof curb dimensions and the new unit dimensions, with properly sized and positioned supply and return openings. Adapter height shall not exceed 24".

4.7. DUCTWORK. Vibration collars, on return only, sized to match the ducting at the unit.

4.8. HARDWARE. All fasteners and exterior hardware shall be stainless-steel.

4.9. SEALANT. Silicon sealant, Dow Corning 795 or equal, for minor sealing of openings as required.

5. INSTALLATION.

5.1. GENERAL. The unit is presently operational, and is cooling an operational air traffic control facility. Therefore, the unit shall be replaced as quickly as possible, with backup temporary cooling, so that the facility's required operating temperature range is maintained.

5.2. Ensure unit to be replaced is electrically disconnected by properly locking-out/tagging-out its pertinent circuit breaker in the distribution panel. Disconnect all wiring to the unit.

5.3. Remove unit after disconnecting ducting, fastening hardware, conduits, and wiring.

5.4. Install new unit, level and plumb, atop pad. Attach to curb with new, stainless steel hardware per manufacturer's recommendation. Any gaps between curb opening and unit shall be spanned with galvanized sheet metal. Existing curb opening is approximately 37.5" x 10'-4".

5.5. Reterminate power wiring to unit's breaker.

5.6. Install vibration collar and reattach existing supply and return ducts as necessary to provide a supply-and-return air-duct system into the facility, similar to existing.

5.7. Reconnect conduit and reterminate thermostat/humidistat wiring to the new unit's control panel. If the new cooling unit's panel is in a location in which existing conduit and/or wiring is insufficient in length, the contractor shall furnish and install new cables and conduit as necessary. Additional wiring or complete new wiring may be required due to humidistat option. New wiring shall be installed in window mullion, similar to existing wiring.

5.8. Install new PVC condensate drain lines to match existing configuration.

5.9. Demonstrate proper operation of the unit by using new thermostat/humidistat configuration and settings. Turn over applicable warranties and manuals to local FAA.

5.10. Remove and dispose of the existing old unit.

6. CLEANUP.

6.1. Before final inspection, the contractor shall thoroughly clean within the construction limits and the surrounding areas affected by this work, including the following:

a. All construction facilities, debris, and rubbish shall be removed from the buildings and the site on a daily basis.

b. All tools, scaffolding, temporary utility connections, building, etc., belonging to the contractor or used under his direction shall be removed from the site.

6.2. All grounds, walkways, and other areas adjacent to the work shall be restored to the original condition before the contractor is released.

7. INSPECTIONS. The contractor shall allow the COR, or other persons designated by the CO, complete access to all portions of the work. The COR shall coordinate and schedule a final inspection date. All work shall be accepted when all work required by this contract, including punch list items, is finished and has passed inspection.